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**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*).
2. Texts in the figures are not translated and shown as it is.

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Dictionary: Last updated 12/19/2008 / Priority: 1. Electronic engineering / 2. Information communication technology (ICT) / 3. Technical term

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## FULL CONTENTS

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### [Claim(s)]

[Claim 1] The electricity-receiving section which is the camera with which luminaire with the screwing section which can screw auxiliary light on is equipped, and receives current supply from said screwing section while screwing on said screwing section, The camera characterized by having the signal superposition circuit which superimposes a video signal on the power supply current which flows through said electricity-receiving section, and outputting said video signal to said screwing section.

[Claim 2] The camera characterized by having the signal output terminal which is the camera with which luminaire with the screwing section which can screw auxiliary light on is equipped, insulates from the electricity-receiving section which receives current supply from said screwing section while screwing on said screwing section, and said electricity-receiving section, is arranged, and outputs a video signal to said screwing section.

[Claim 3] The camera which is camera built-in luminaire with a fluorescent light, other lightings, and the screwing section that can screw auxiliary light on, is screwed on said screwing section, and receives current supply from said screwing section, Camera built-in luminaire characterized by having the signal superposition circuit which superimposes the video signal from said camera on the external power current supplied from the outside.

[Claim 4] Camera built-in luminaire according to claim 3 characterized by screwing a camera according to claim 1 or 2 on said screwing section.

[Claim 5] Camera built-in luminaire according to claim 3 or 4 characterized by attaching to the circumference of said screwing section the shield which covers light.

[Claim 6] Camera built-in luminaire given in one of Claim 3 or Claim 5 which are characterized by having the microphone into which said camera inputs a sound, and the signal superposition circuit of said luminaire superimposing a sound signal on said external power current in addition to said video signal.

[Claim 7] The signal extracting circuit which extracts the illumination control signal which shows lighting or putting out lights of said lighting on which the external power current supplied from the outside is overlapped, Camera built-in luminaire given in one of Claim 3 or Claim 6 which are characterized by having the lighting control section which controls lighting and putting out lights of said lighting based on said illumination control signal.

[Claim 8] The signal superposition circuit which superimposes said illumination control signal over

camera built-in luminaire according to claim 7 on said external power current, When the signal extracting circuit which extracts the video signal from said camera built-in luminaire from said external power current, the image recognition section which recognizes the picture which said video signal contains and detects people, and said image recognition section detect people, The control unit characterized by having the Lighting Sub-Division directions section which outputs the illumination control signal which directs lighting of said lighting to said signal superposition circuit.

[Claim 9] The supervisory unit characterized by having the signal extracting circuit which extracts Claim 3 or the video signal from camera built-in luminaire given in one of Claim 7 from said external power current, and a generating picture means to output the picture which said video signal contains.

[Claim 10] When the signal superposition circuit which superimposes said illumination control signal over camera built-in luminaire according to claim 7 on said external power current, the image recognition section which recognizes the picture which said video signal contains and detects people, and said image recognition section detect people, The supervisory unit according to claim 9 characterized by having the Lighting Sub-Division directions section which outputs the illumination control signal which directs lighting of said lighting to said signal superposition circuit.

## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the camera, the camera built-in luminaire, control unit, and supervisory unit which mainly perform the surveillance in a dwelling.

[0002]

[Description of the Prior Art] Conventionally, the camera was built in luminaire and camera built-in luminaire on the street which was indicated to JP,H7-146502,A existed as what supervises.

[0003]

[Problem to be solved by the invention] however, [ such conventional camera built-in luminaire ] There was no consideration about control of the surveillance camera in the Lighting Sub-Division lighted state, and while consuming useless electric power when it was not necessary to operate a surveillance camera since it was only performing continuous monitoring, there was a problem of picturizing and recording an unnecessary picture.

[0004] Moreover, there was a problem that the wiring work of the transmission cable which transmits a video signal will not be easy, and introductory cost will cost dearly.

[0005] This invention was made in order to solve such a problem, and it offers the outstanding camera built-in luminaire which can be made to follow the lighted state of a lighting.

[0006]

[Means for solving problem] The electricity-receiving section which the camera of this invention is a camera with which luminaire with the screwing section which can screw auxiliary light on is equipped, and receives current supply from said screwing section while screwing on said screwing section, It has the signal superposition circuit which superimposes a video signal on the power supply current which flows through said electricity-receiving section, and has the composition which outputs said video signal to said screwing section. In the luminaire which supplies the power supply for auxiliary lights in the luminaire of the usual specification by this composition only when a fluorescent light and other lightings are in a putting-out-lights state Only when the lighting has gone out by screwing the camera of this

invention on instead of auxiliary light, a camera will picturize a picture, and a surveillance camera can be made to operate, only when switching off a lighting and it is out outside a dwelling. Moreover, since the space in particular for installing a new camera is not needed, a supervisory system can be introduced easily.

[0007] The electricity-receiving section which the camera of this invention is a camera with which luminaire with the screwing section which can screw auxiliary light on is equipped, and receives current supply from said screwing section while screwing on said screwing section, It insulates from said electricity-receiving section, is arranged, and has composition with the signal output terminal which outputs a video signal to said screwing section. In the luminaire which supplies the power supply for auxiliary lights in the luminaire of the usual specification by this composition only when a fluorescent light and other lightings are in a putting-out-lights state Only when the lighting has gone out by screwing the camera of this invention on instead of auxiliary light, a camera will picturize a picture, and a surveillance camera can be made to operate, only when switching off a lighting and it is out outside a dwelling. Moreover, since the space in particular for installing a new camera is not needed, a supervisory system can be introduced easily.

[0008] The camera which the luminaire of this invention is camera built-in luminaire with a fluorescent light, other lightings, and the screwing section that can screw auxiliary light on, is screwed on said screwing section, and receives current supply from said screwing section, It has composition with the signal superposition circuit which superimposes the video signal from said camera on the external power current supplied from the outside. A surveillance camera can be made to operate, only when a camera will picturize a picture only when the lighting has gone out by screwing a camera on instead of auxiliary light, and switching off a lighting and it is out outside a dwelling with this composition. Moreover, since the video signal from a camera is superimposed on external power current and it transmits on an electric light line, it becomes unnecessary the transmission cable which transmits a video signal wiring working, the cost of wiring will not start, but a supervisory system can be introduced easily.

[0009] The luminaire of this invention has the composition which attached to the circumference of said screwing section the shield which covers light. Since it is lost by this composition that the light from a lighting and the other circumferences turns to a camera, a clear picture can be picturized.

[0010] The luminaire of this invention has the microphone into which said camera inputs a sound, and has the composition whose signal superposition circuit of said luminaire superimposes a sound signal on said external power current in addition to said video signal. This composition, the situation in a dwelling can be exactly grasped with a sound.

[0011] The luminaire of this invention has the composition equipped with the signal extracting circuit which extracts the illumination control signal which shows lighting or putting out lights of said lighting on which the external power current supplied from the outside is overlapped, and the lighting control section which controls lighting and putting out lights of said lighting based on said illumination control signal. Since an electric light line can be minded and a lighting can be turned on and switched off from the exterior by this composition while the camera is picturizing the picture, only when required, the situation in a dwelling can be exactly grasped by a clear picture.

[0012] The signal superposition circuit which superimposes said illumination control signal [ as opposed to camera built-in luminaire in the control unit of this invention ] on said external power current, When the signal extracting circuit which extracts the video signal from said camera built-in luminaire from said external power current, the image recognition section which recognizes the picture which said video

signal contains and detects people, and said image recognition section detect people, It has the composition equipped with the Lighting Sub-Division directions section which outputs the illumination control signal which directs lighting of said lighting to said signal superposition circuit. When people invade in a dwelling by this composition, the situation in a dwelling can be exactly grasped by a clear picture.

[0013] The supervisory unit of this invention has the composition equipped with the signal extracting circuit which extracts the video signal from camera built-in luminaire from said external power current, and a generating picture means to output the picture which said video signal contains. If it connects with an electric light line by this composition, the surveillance in a dwelling can be carried out.

[0014] When, as for the supervisory unit of this invention, the signal superposition circuit which superimposes said illumination control signal over camera built-in luminaire on said external power current, the image recognition section which recognizes the picture which said video signal contains and detects people, and said image recognition section detect people, It has the composition equipped with the Lighting Sub-Division directions section which outputs the illumination control signal which directs lighting of said lighting to said signal superposition circuit. When people invade in a dwelling by this composition, the situation in a dwelling can be exactly grasped by a clear picture.

[0015]

[Mode for carrying out the invention] The form of operation of this invention is hereafter explained using Drawings.

[0016] (The 1st embodiment) Drawing 1 is the block diagram of the supervisory system in the 1st embodiment of this invention.

[0017] The supervisory system in this embodiment consists of luminaire 200 installed in the dwelling, and a supervisory unit 300 (a control unit and supervisory unit) which is installed outside a dwelling and communicates with the luminaire 200 through the electric light lines 40a, 40b, and 40c (external power supply line), as shown in drawing 1.

[0018] The video signal which the luminaire 200 has a camera 100, and this camera 100 picturizes a picture, and contains the picturized picture minds the electric light lines 40a, 40b, and 40c. It is transmitted to the supervisory unit 300, and when the supervisory unit 300 outputs a video signal as a picture, the inside of a dwelling is supervised in the supervisory unit 300.

[0019] A camera 100 has a lens 11, CCD(Charge Coupled Device) 12, a microphone 13, the digital disposal circuit 14, the signal superposition circuit 15, and the electricity-receiving section (the 1st electricity-receiving section 18 and 2nd electricity-receiving section 19).

[0020] In a camera 100, a lens 11 converges the light in a dwelling on CCD12.

[0021] CCD12 change light into electric information (video signal).

[0022] A microphone 13 inputs a sound and changes it into electric information (sound signal).

[0023] The digital disposal circuit 14 performs amplification and agreement-ization to the sound signal inputted from the video signal and microphone 13 which were inputted from CCD12, compounds a video signal and a sound signal, and outputs them to the signal superposition circuit 15.

[0024] As for the signal superposition circuit 15, the signal (composite signal) with which the video signal and the sound signal were compounded is superimposed on the Alternating Current (internal electrical power source current) which flows through the electricity-receiving sections 18 and 19.

Moreover, the signal superposition circuit 15 supplies the power supply supplied through the electricity-receiving sections 18 and 19 to each part in the camera 100 which needs digital-disposal-circuit 14 and

other current supply.

[0025] The electricity-receiving sections 18 and 19 are electrodes which receive current supply from the luminaire 200. In addition, the 1st internal electrical power source supply line 41 supplies the power supply of the voltage level which the jujube tree ball 23 turns on.

[0026] The luminaire 200 has a camera 100, a fluorescent light 21 (lighting), the magnetization coil 22, the signal extracting circuits 24 and 26, the signal superposition circuit 25, 1st switch SW1, 2nd switch SW2, 3rd switch SW3, and the lighting control section 27.

[0027] 1st switch SW1 changes whether a power supply is supplied to the camera 100 screwed on the luminaire 200 instead of the jujube tree ball 23 or the jujube tree ball 23. If this 1st switch SW1 will be in the state of ON, Alternating Current (1st internal electrical power source current), and the video signal and sound signal from a camera 100 will be transmitted to the 1st internal electrical power source supply line 41.

[0028] It is changed whether 2nd switch SW2 and 3rd switch SW3 turn on a fluorescent light 21. If this 2nd switch SW2 or 3rd switch SW3 will be in the state of ON, Alternating Current (2nd internal electrical power source current) will be transmitted to the 2nd internal electrical power source supply line 42, the magnetization coil 22 will be magnetized, and a fluorescent light 21 will light up.

[0029] In addition, when 1st switch SW1 is ON state, 2nd switch SW2 will be in OFF state, and when 2nd switch SW2 are ON state, 1st switch SW1 will be in OFF state.

[0030] The signal extracting circuit 24 extracts a video signal and a sound signal from the 1st internal electrical power source supply line 41.

[0031] The signal superposition circuit 25 superimposes the video signal and sound signal which were extracted on the Alternating Current (external power current) which flows through the external power supply line 40a.

[0032] The signal extracting circuit 26 extracts the illumination control signal on which the Alternating Current (external power current) supplied from the outside which the external power supply line 40a transmits is overlapped. Here, an illumination control signal is a signal which directs Lighting Sub-Division or putting out lights of a fluorescent light 21.

[0033] The lighting control section 27 controls lighting and putting out lights of a fluorescent light 21 based on the illumination control signal which the signal extracting circuit 26 extracted. Specifically, the lighting control section 27 changes the ON state and OFF state of 3rd switch SW3. In addition, [ as mentioned above, when 1st switch SW1 is ON state, 2nd switch SW2 will be in OFF state, but ] When the lighting control section 27 changes 3rd switch SW3 from OFF state to ON state and 1st switch SW1 is ON state (i.e., when the camera 100 is picturizing), a fluorescent light 21 is made to turn on.

[0034] The supervisory unit 300 has the signal extracting circuit 31, the digital disposal circuit 32, a monitor 33 (generating picture section), a loudspeaker 34 (voice output section), the image recognition section 35, the Lighting Sub-Division directions section 36, and the signal superposition circuit 37.

[0035] The signal extracting circuit 31 extracts the video signal and sound signal from the luminaire 200 from Alternating Current (external power current) of the external power supply line 40c. Here, the signal which the signal extracting circuit extracted is a signal (composite signal) with which the video signal and the sound signal were compounded.

[0036] About the composite signal inputted from the signal extracting circuit 31, the digital disposal circuit 32 separates a video signal and a sound signal, and performs decoding and amplification to the video signal and sound signal which were separated.

[0037] A monitor 33 outputs the picture which the video signal inputted from the digital disposal circuit 32 contains.

[0038] A loudspeaker 34 carries out [ sound ] the sound signal inputted from the digital disposal circuit 32, and outputs it.

[0039] The image recognition section 35 recognizes the picture which the video signal inputted from the digital disposal circuit 32, i.e., the video signal from the luminaire 200, contains, and detects those who are in a dwelling. The image recognition section 35 notifies the Lighting Sub-Division directions section 36 that people were detected, when people are detected.

[0040] The Lighting Sub-Division directions section 36 outputs the illumination control signal which directs lighting of a fluorescent light 21 to the signal superposition circuit 37, when the image recognition section 35 detects people.

[0041] The signal superposition circuit 37 superimposes an illumination control signal on the Alternating Current (external power current) which the external power supply line 40c transmits.

[0042] As for the perspective view of the luminaire 200, and drawing 3 , the sectional view of a camera 100 and drawing 4 of drawing 2 are the perspective views of a camera 100. In addition, in drawing 2 , drawing 3 , and drawing 4 , the same sign is given to the same constituent elements as the constituent elements shown in drawing 1 .

[0043] The luminaire 200 is equipped with the 1st electric supply section 28 and the 2nd electric supply section 29 (screwing sections 28 and 29) which screw a camera 100 on instead of, and the shield 201 which covers a surroundings lump of the light from a fluorescent light 21 to a camera 100 in drawing 2 .

[ a jujube tree ball or a jujube tree ball ]

[0044] Screwing the 1st electricity-receiving section 18 of the camera 100 shown in drawing 3 and drawing 4 in the 1st electric supply section 28 of the luminaire 200 shown in drawing 2 , the 2nd electricity-receiving section 19 of a camera 100 contacts the 2nd electric supply section 29 of the luminaire 200. That is, the electricity-receiving sections 18 and 19 of a camera 100 screw on with the electric supply sections 28 and 29 (screwing section) of luminaire. Thus, after the electricity-receiving sections 18 and 19 of the camera 100 had screwed on the electric supply sections 28 and 29 of the luminaire 200, when 1st switch SW1 of drawing 1 changes into the state of ON, a power supply is supplied to a camera 100 from the luminaire 200.

[0045] The shield 201 of the luminaire 200 encloses the circumference of a camera 200, when it is attached to the circumference of the electric supply sections 28 and 29 (screwing section) of the luminaire 200 and a camera 100 is screwed on, as shown in drawing 2 . Therefore, this shield 201 is in the state where the camera 100 was screwed on, and when 3rd switch SW3 of drawing 1 change into the state of ON, it covers a surroundings lump of the light from a fluorescent light 21 to a camera 100.

[0046] (The 2nd embodiment) The block diagram showing a supervisory system [ in / in drawing 5 / the 2nd embodiment of this invention ], the sectional view showing the camera [ in / in drawing 6 / the 2nd embodiment of this invention ] 110, and drawing 7 are the perspective views showing the camera 110. In addition, in drawing 5 , drawing 6 , and drawing 7 , the same sign is given to the same constituent elements as the constituent elements shown in drawing 1 of the 1st embodiment, drawing 3 , and drawing 4 .

[0047] As shown in drawing 6 and drawing 7 , unlike the camera of the 1st embodiment, it insulates



from the 1st electricity-receiving section 18 and the 2nd electricity-receiving section 19, the camera 110 of the 2nd embodiment is arranged, and it has the signal output terminal 111 which outputs a video signal to the 1st electric supply section 28 and the 2nd electric supply section 29 of luminaire. By the insulator 112, it is insulated with the 1st electricity-receiving section 18 of the camera 110, and, specifically, the signal output terminal 111 of the camera 110 is insulated also with the 2nd electricity-receiving section 19.

[0048] Moreover, the signal output terminal 111 contacts the signal input terminal 211 of luminaire by screwing a camera 110 on luminaire.

[0049] In addition, in the luminaire of the 2nd embodiment, the 1st electric supply section 28, the 2nd electric supply section 29, and the signal input terminal 211 constitute the screwing section which screws a jujube tree ball or a camera 110 on.

[0050] Moreover, in drawing 5, the signal output circuit 116 of a camera 110 outputs the composite signal (a video signal and sound signal) compounded by the digital disposal circuit 14 to the signal output terminal 111 while supplying a power supply to each part in digital-disposal-circuit 14 and other cameras 110.

[0051] Moreover, the luminaire 210 superimposes the composite signal (a video signal and sound signal) which the signal superposition circuit 25 inputted through the signal output terminal 111 on external power current.

[0052] The example which installed luminaire (200 or 210) and the supervisory unit 300 in drawing 8 is shown. A video signal, a sound signal, and an illumination control signal are transmitted through an established electric light line.

[0053] As explained above, [ the luminaire of the 1st embodiment and the 2nd embodiment ] Only when the lighting has gone out by screwing a camera on instead of auxiliary light, a camera will picturize a picture, and a surveillance camera can be made to operate, only when switching off a lighting and it is out outside a dwelling. Moreover, since the space in particular for installing a new camera is not needed, a supervisory system can be introduced easily.

[0054] [ moreover, the luminaire of the 1st embodiment and the 2nd embodiment ] Since the video signal from a camera is superimposed on external power current and it transmits on an electric light line, it becomes unnecessary the transmission cable which transmits a video signal wiring working, the cost of wiring will not start, but a supervisory system can be introduced easily.

[0055] Moreover, since it is lost that the light from a lighting and the other circumferences turns to a camera, the luminaire of the 1st embodiment and the 2nd embodiment can picturize a clear picture.

[0056] Moreover, since the supervisory unit of the 1st embodiment and the 2nd embodiment can mind an electric light line and can turn on and switch off a lighting from the exterior while the camera is picturizing the picture, only when required, it can grasp the situation in a dwelling exactly by a clear picture.

[0057] Moreover, the supervisory unit of the 1st embodiment and the 2nd embodiment can carry out the surveillance in a dwelling, if it connects with an electric light line.

[0058] In addition, you may make it connect to an external power supply line the control unit which has the signal superposition circuit 37, the signal extracting circuit 31, the digital disposal circuit 32, the image recognition section 35, and the Lighting Sub-Division directions section 36. In this case, you may constitute the supervisory unit 300 so that it may have the signal extracting circuit 31, the digital disposal circuit 32, a monitor 33 (generating picture means), and a loudspeaker 34 (voice output means).

Thus, you may constitute the control unit which controls lighting and putting out lights of a lighting, and the supervisory unit which supervises the inside of a dwelling as different equipment.

[0059] Moreover, you may constitute the signal superposition extractor which has the signal extracting circuit 31 and the signal superposition circuit 37 as different equipment from a supervisory unit and a control unit.

[0060]

[Effect of the Invention] This invention can offer the camera built-in luminaire which has the outstanding effect of the ability to make the lighted state of a lighting follow.

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[Brief Description of the Drawings]

[Drawing 1] The block diagram showing the supervisory system in the 1st embodiment of this invention

[Drawing 2] The perspective view showing the luminaire in the 1st embodiment of this invention

[Drawing 3] The sectional view showing the camera in the 1st embodiment of this invention

[Drawing 4] The perspective view showing the camera in the 1st embodiment of this invention

[Drawing 5] The block diagram showing the supervisory system in the 2nd embodiment of this invention

[Drawing 6] The sectional view showing the camera in the 2nd embodiment of this invention

[Drawing 7] The perspective view showing the camera in the 2nd embodiment of this invention

[Drawing 8] The figure for explaining operation in the 1st embodiment and the 2nd embodiment of this invention

[Explanations of letters or numerals]

100, 110 Camera

11 Lens of Camera

12 CCD of Camera

13 Microphone of Camera

14 Digital Disposal Circuit of Camera

15 Signal Superposition Circuit of Camera

18 1st Electricity-receiving Section of Camera

19 2nd Electricity-receiving Section of Camera

111 Signal Output Terminal of Camera

112 Insulating Section of Camera

116 Signal Output Circuit of Camera

200, 210 Luminaire

21 Fluorescent Light of Luminaire (Lighting)

22 Magnetization Coil of Luminaire

23 Jujube Tree Ball (Auxiliary Light)

24 Signal Extracting Circuit of Luminaire

25 Signal Superposition Circuit of Luminaire

26 Signal Extracting Circuit of Luminaire

27 Lighting Control Section of Luminaire

28 1st Electric Supply Section of Luminaire (Screwing Section)



29 2nd Electric Supply Section of Luminaire (Screwing Section)

201 Shield

211 Signal Input Terminal of Luminaire

SW1 The 1st switch of luminaire

SW2 The 2nd switch of luminaire

SW3 The 3rd switch of luminaire

300 Supervisory Unit (Control Unit and Supervisory Unit)

31 Signal Extracting Circuit of Supervisory Unit

32 Digital Disposal Circuit of Supervisory Unit

33 Monitor of Supervisory Unit (Video Output Section)

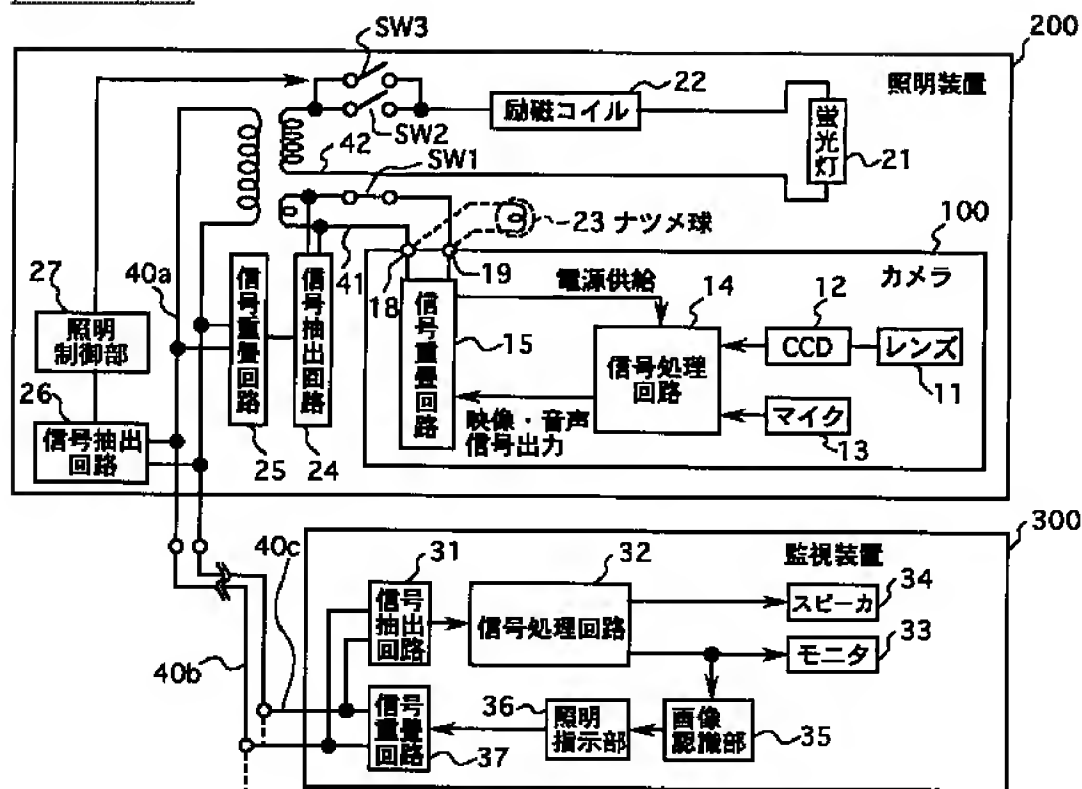
34 Loudspeaker of Supervisory Unit (Voice Output Section)

35 Image Recognition Section of Supervisory Unit

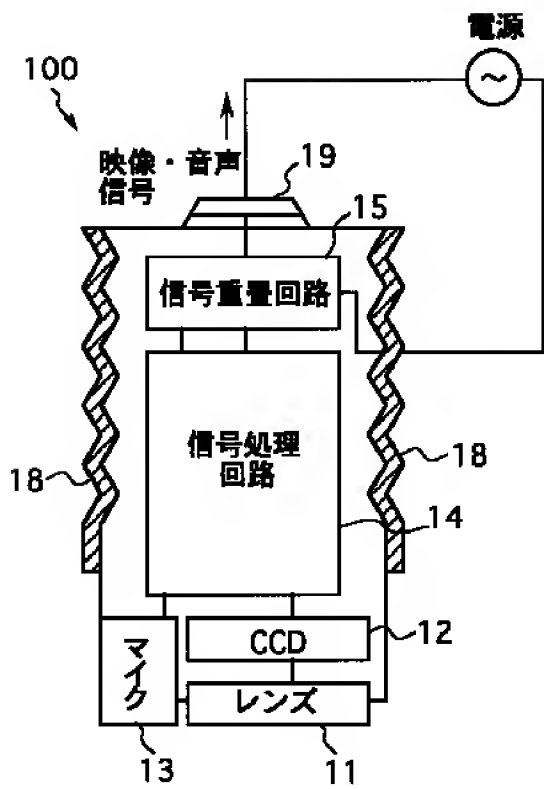
36 Lighting Sub-Division Directions Section of Supervisory Unit

37 Signal Superposition Circuit of Supervisory Unit

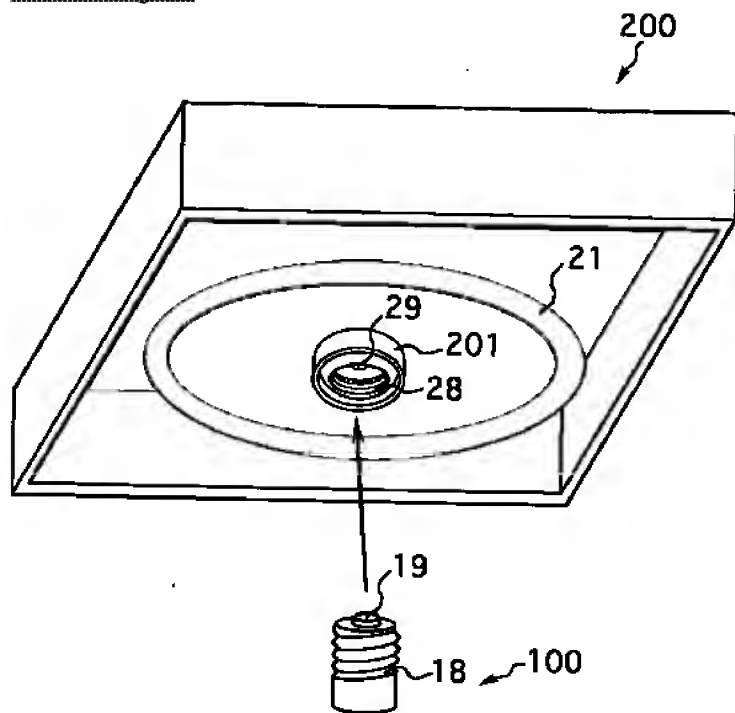
[Drawing 1]



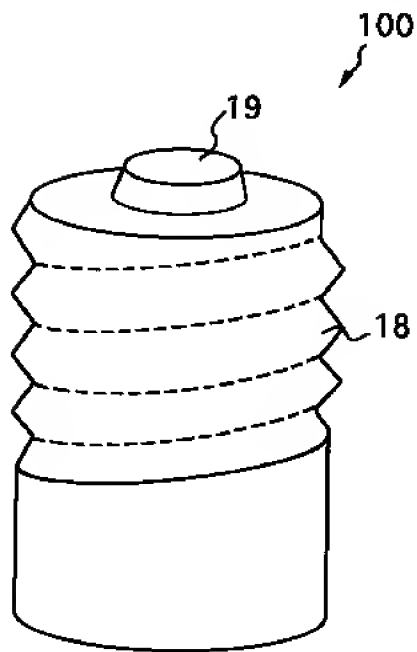
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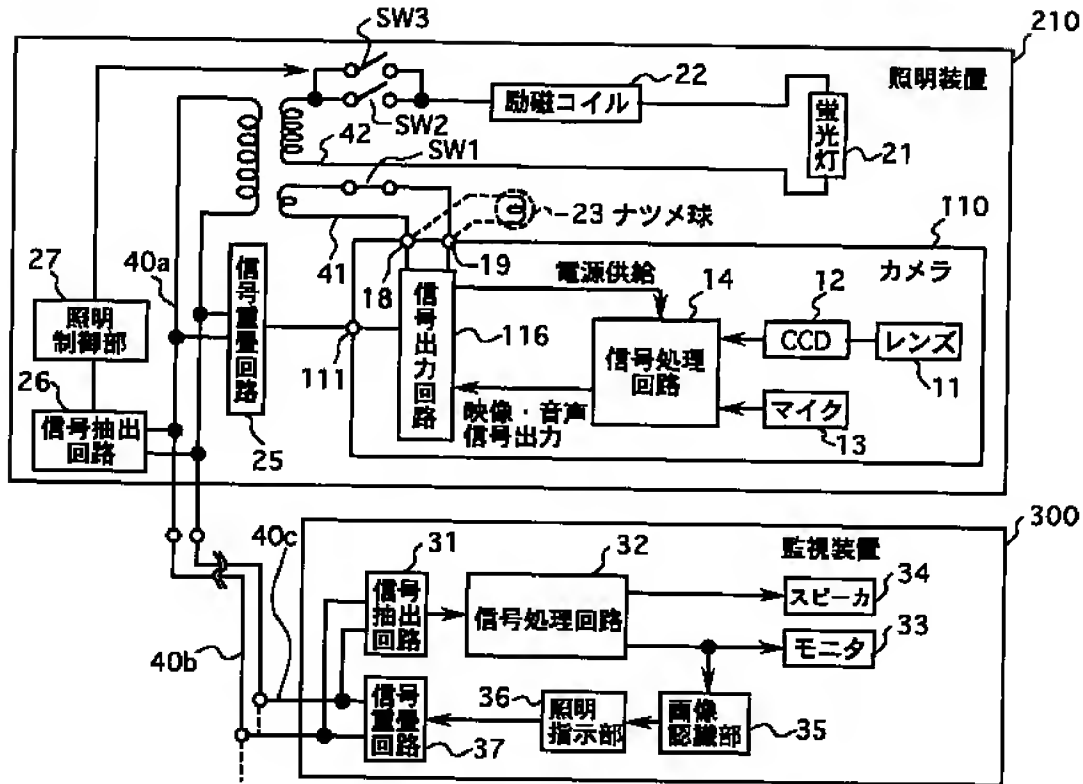
[Drawing 2]



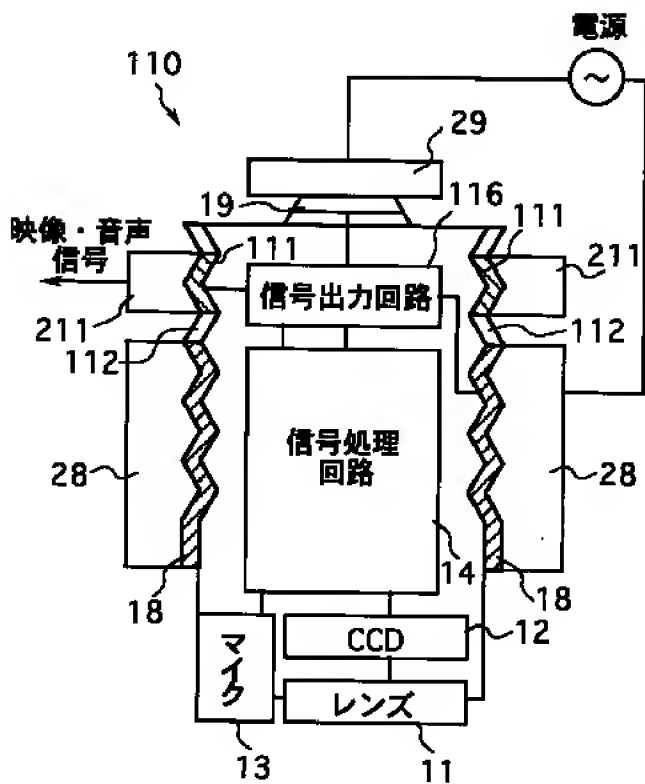
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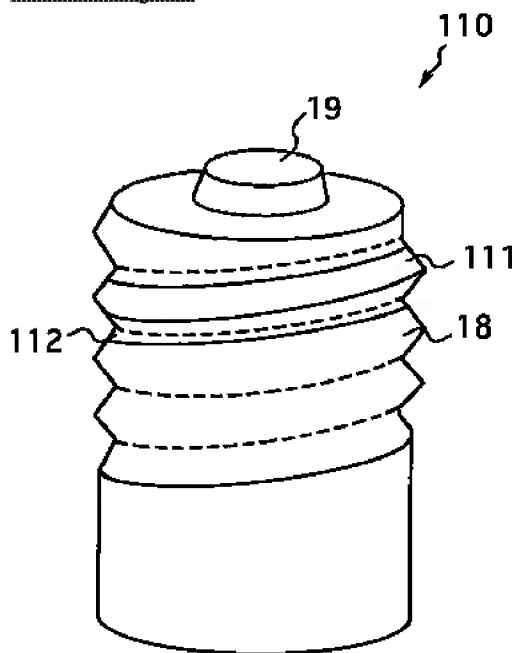
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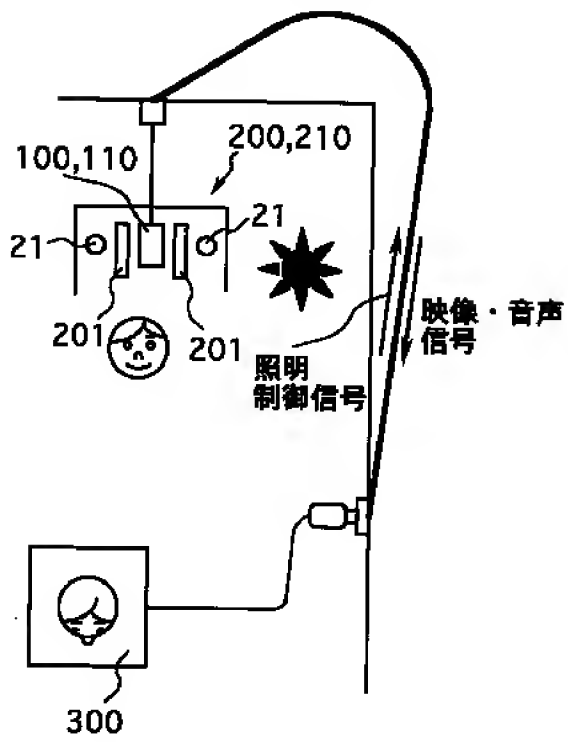
[Drawing 6]



[Drawing 7]



[Drawing 8]



[Translation done.]